DOCUMENT RESUME

ED 451 632 EC 308 314

AUTHOR Davis, Cheryl; Francis, Pamela; Harlan, Denese
TITLE Providing Real-Time Captioning, C-Print Speech To Print Transcription, Assistive Listening Devices and Other Technologies: Questions and Answers.
INSTITUTION Saint Paul Technical Coll., MN. Midwest Center for Postsecondary Outreach.
SPONS AGENCY Office of Special Education and Rehabilitative Services (ED), Washington, DC.
REPORT NO 1097
PUB DATE 2000-11-00
NOTE 39p.; Edited by David Buchkoski. Cover page varies.
AVAILABLE FROM PEPNet Resource Center, National Center on Deafness, California State University, 18111 Nordhoff St., Northridge, CA 91330-8267. Web site: http://www.pepnet.org.
PUB TYPE Guides - Non-Classroom (055)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Accessibility (for Disabled); *Assistive Devices (for Disabled); Audio Equipment; *Captions; *Deafness; *Hearing Impairments; Higher Education; *Sensory Aids
IDENTIFIERS Assistive Listening Devices; Real Time Captioning

ABSTRACT

This booklet provides questions and answers for postsecondary educational institutions concerning provision of access and accommodations to individuals who are deaf and hard of hearing. Questions are about assistive listening devices (ALDs), C-Print technology, real-time captioning, and policy issues. Preliminary information concerns the mission and members of the Postsecondary Education Program Network. Questions address such concerns as use of ALDs by students with cochlear implants, use of ALDs in a conference table setting, use of an ALD by a student who has a learning disability or attention deficit disorder, differences between C-Print and real-time captioning, qualifications and training of the C-Print captionist, costs of C-Print software and hardware, recommended accuracy percentages for real-time captioning, use of real-time captioning in group learning environments, and use of real-time captioning with visually impaired students. Some policy issues addressed include making C-Print notes available to faculty and other students, eligibility for services, and determination of appropriate accommodations. (DB)

Reproductions supplied by EDRS are the best that can be made from the original document.

ED 451 632

Providing Real-Time Captioning, C-Print Speech To Print Transcription, Assistive Listening Devices and Other Technologies: Questions and Answers.

Cheryl Davis, Pamela Francis, Denese Harlan

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

- This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

EC 308 314

BEST COPY AVAILABLE

Providing Real-Time Captioning, C-Print Speech to Print Transcription and Assistive Listening Devices

Questions and Answers

Authored by

Cheryl Davis
Coordinator
Western Oregon University
Monmouth, Oregon

Pamela Francis
C Print Project/Training Coordinator
Rochester Institute of Technology
Rochester, New York

Denese Harlan
Realtime Captioning Coordinator
University of California, Davis
Davis, California

A publication of the Midwest Center for Postsecondary Outeach (MCPO) and the Postsecondary Education Programs Network (PEPNet)

EC 308314

Providing Real-Time Captioning, C-Print Speech to Print Transcription, Assistive Listening Devices and Other Technologies

Questions and Answers

Authored by

Cheryl Davis
Coordinator
Western Oregon University
Monmouth, Oregon

Pamela Francis
C Print Project/Training Coordinator
Rochester Institute of Technology
Rochester, New York

Denese Harlan
Realtime Captioning Coordinator
University of California, Davis
Davis, California

Edited by

David Buchkoski

November, 2000

This publication was developed under contract with the U.S. Department of Education, Office of Special Education and Rehabilitative Services (OSERS). The contents herein do not necessarily represent the Department of Education's policy or endorsement by the Federal Government.

This publication is also available upon request on audiotape or in Braille.

TABLE OF CONTENTS

Introduction i

Preface ii

Mission iii

Regional Centers iv

Assistive Listening Devices 1- 8

C-Print Technology 9-16

Real-Time Captioning 16- 22

Policy Questions 23- 29

References 29

Introduction

On March 16, 2000, the Midwest Center for Postsecondary Outreach (MCPO), in collaboration with the Postsecondary Education Program Network (PEPNet), hosted a video teleconference in which the authors of this document appeared. Due to time constraints the panelists were unable to respond to all of the questions submitted. This document provides viewers with technical assistance to several of those questions. The information provided is intended to serve as a guide in assisting service providers working in colleges and universities at large,and others, in understanding the obligation of institutions of higher learning to serving students who are deaf or hard of hearing.

A video copy of the full live teleconference is available from the PEPNet Resource Center at the National Center on Deafness, California State University, Northridge. For further information on providing Real-Time Captioning, C-Print Speech to Print Transcription and Assistive Listening Devices, readers are encouraged to contact the regional technical assistance center serving their region. Information on the PEPNet Regional Centers can be found at www.pepnet.org.

Preface

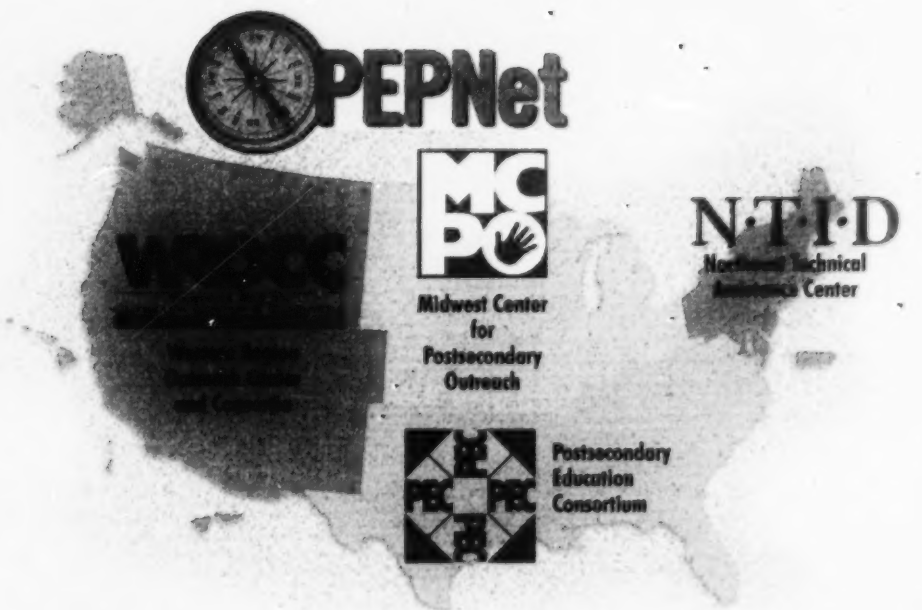
The questions and responses in this handbook were identified during the March 16, 2000 live satellite broadcast "Providing Real-time Captioning, C-Print Speech to Print Transcription, and Assistive Listening Devices". The three authors of this document served as panelists during that teleconference. There is also a policy section including questions and answers that are generic to each of these auxiliary services. For further information on these and other subjects related to serving deaf or hard of hearing students in postsecondary education, contact the PEPNet Regional Center in your region. This booklet can also be found on the PEPNet website at www.pepnet.org

I would like to thank Ms. Claudia Bergquist of Columbus State Community College for her leadership contributions in the production of the teleconference and her work as the program moderator.

David Buchkoski
MCPO Training Coordinator

Mission

The **Postsecondary Education Program Network (PEPNet)** mission is to promote coordination and collaboration among the four Regional Postsecondary Centers for Individuals who are deaf and hard of hearing. PEPNet's purpose is to provide technical assistance to postsecondary educational institutions providing access and accommodation to individuals who are deaf or hard of hearing.



BEST COPY AVAILABLE

Western Region Outreach Center & Consortia (WROCC)

California State University, Northridge
18111 Nordhoff Street
Northridge, CA 91330-8267
Toll Free (888) 684-4695 (VTTY)
(818) 677-4899 (Fax)
Email: wrocc@csun.edu
Merri C. Pearson, Director

Midwest Center for Postsecondary Outreach (MCPO)

St. Paul Technical College
235 Marshall Avenue
St. Paul, MN 55102-1807
(651) 221-1337 (V/TTY)
(651) 221-1339 (Fax)
Email: ray.olson@sptc.mnscu.edu
Raymond Olson, Director

Postsecondary Education Consortium (PEC)

The University of Tennessee
2229 Dunford Hall
Knoxville, TN 37996-4020
(423) 974-8427 (V/TTY)
(423) 974-3522 (Fax)
Email: pec@utk.edu
Donnell Ashmore, Director

Northeast Technical Assistance Center (NETAC)

at National Technical Institute for the Deaf,
a college of Rochester Institute of Technolocy
52 Lomb Memorial Drive
Rochester, NY 14623
(716) 475-6433 (V/TTY)
(716) 475-7660 (Fax)
Email: netac@rit.edu
Karen Hopkins, Director

Assistive Listening Devices (ALD's)

Can students with cochlear implants benefit from ALD's?

Yes, students with Cochlear Implants (CI) can benefit from ALD's. Not all CI's however, have an adjustment for sensitivity or volume. In addition, persons using CI's may still have problems with clarity of sound in classrooms and other noisy environments, which can only add to the problem. ALD's can provide the same benefits to CI users as hearing aid users. Patch cords are used to connect the CI processor to the ALD. However, patch cords must be compatible with both the type of CI processor and the model of ALD being used. When ordering patch cords, be sure to provide this information, or check with the CI manufacturer to be sure that you have the correct information. Some patch cords have built-in surge protectors. This protects the CI processor from damage in case of a power surge. This is not necessary when coupling with battery-operated equipment, but should be used if the processor is patched into, for example, a television or a computer.

How can students using ALD's hear the comments and questions of other students in the class?

Class discussions are difficult situations to accommodate. Where possible, seat the students so that they can see each other (e.g., in a circle) so that students can identify who is speaking and speech read as much as possible.

Communication strategies that will help greatly in this situation include: one person speaks at a time, students should raise their hands to be called on, and speakers should identify themselves before speaking. These strategies give everyone a chance to visually locate who is speaking, something that is vital to understanding for the hard-of-hearing student. Depending upon the hard-of-hearing student's preference and upon the characteristics of the class, other effective accommodations might include an interpreter (oral or sign), C-Print, or realtime captioning.

Assistive listening devices are difficult to use in group discussions with large numbers of people. The hard-of-hearing student will pick up only comments said into a microphone that is connected to the system. For students who are sitting close by, the receiver used by the hard-of-hearing student should include an environmental microphone. This is an option available on ALD's that costs extra, but is worth it. (Shop around—some companies sell them for as much as $100 less than others.) The instructor has the microphone and transmitter, and the student has the receiver and headset or other coupling device. But, in addition to the headset, the receiver has an additional jack and volume control for another microphone. The individual points the microphone on the receiver in the direction of near-by speakers to pick up those voices on the microphone, which can further cut down on extraneous noise and improve listening. He is still able to pick up the professor's comments through the other mic on the profes-

sor's transmitter.

ALD's can be plugged into the auxiliary out jack on PA systems. For larger groups, a room could be set up with multiple microphones that are all connected to the PA. All sounds coming through the PA would then be transmitted to the ALD receiver. Making sure that everyone speaks into the microphone requires discipline on the group leader's part. It is best to use microphones that are only live when spoken into, otherwise all of the room noise will be transmitted to the student, defeating the purpose of using ALD's. For fast moving discussions where the communication strategies described above are not used, or when it is not possible to set up an adequate number of microphones, interpreters, realtime captioning, or C-Print may provide better communication access.

How can ALD's be used for a conference table setting?

There are several different tabletop, area, or conference microphones that are available for use with both FM and infrared systems. You must already have a transmitter and receiver system. The conference mic is simply a different style of microphone that is plugged into the transmitter. Some of these microphones have a wood grain finish, while others are small black triangles. Generally, conference microphones will pick up the sound around a table that seats 8-10 persons. For larger tables, multiple microphones can be 'daisy-chained' together using patch cords. Check with the manufacturer about specifics. A list of

companies selling Assistive equipment can be found at http://www.wou.edu/nwoc/ald.htm#companies.

Are there any studies on the detrimental effects of being exposed to the electromagnetic radio waves from ALD's?

Electromagnetic fields (EMF) are given off by almost anything running off of a motor or electricity. Some devices create more EMF than others, but we are all exposed to EMF on a daily basis. Power lines, mobile phones, and cell phone towers have been in the news recently as posing possible health risks. However, in the United States, we often use the term EMF incorrectly when referring to the transmission process between induction loops and neckloops with telecoils. In researching this question, I discovered that this transmission process is a function of magnetic fields, measured in Amp/metre, and not electromagnetic radiation measured in volt/metre. Magnetic fields have not been shown to pose a health risk; in fact, some claim there are health benefits.

On the other hand, electromagnetic radiation does come from an RF style radiator, an FM system being an example of one. While the power is never very high, a transmitter might be located very close to people, typically worn on the body. As far as I know, there has been no research into this question, but the exposure would seem to be so low as to pose little risk. Guidelines for limiting exposure can be found on the Internet from the International Commission on Non-Ionizing Radiation Protection at

http://www.icnirp.de/download.htm. (My thanks to Leon A. Pieters of Ampetronic Ltd. Newark, Notts. UK for clarifying the technology and terminology issues here.)

Why isn't an FM system considered a personal device like a hearing aid and a wheelchair? There appear to be enough personal uses for an FM system that lend itself to the personal device classification under ADA.

"A public accommodation is not required to provide personal devices such as wheelchairs; individually prescribed devices (e.g., prescription eyeglasses or hearing aids); or services of a personal nature including assistance in eating, toileting, or dressing." Section 36.306

Certainly there are many uses for small-area assistive listening devices, no matter what the method of transmission—FM, infrared, or induction that are personal, such as hearing in a noisy restaurant or listening in a car. However, ALD's are not "individually prescribed devices" as described in Section 36.306. They amplify sound the same as turning up the volume on the television. Public entities must make their programs communication accessible. There could be many problems if individuals had to bring their own devices to each listening situation. For example, liability and warranty issues might arise in interfacing an outside party's equipment with the institution's. Even when the equipment wasn't directly connected to the program's sound system, problems would arise if more than one individual brought ALD's to use, the speaker would need to hold multiple microphones and transmitters

for each person's device. In addition, the environment or setting will have an impact on the best system to use that the individual may not be aware of before arriving. The equipment kept on hand by the program or institution should be what works best in that setting. For all of these reasons, public entities must provide assistive listening equipment, rather than requiring it of the individual.

Is it accurate that an FM system functions less effec tively if the transmitter microphone is directed at a TV during videotape showing? What is the best way to deal with this assuming that a 5-10 minute videotape is not captioned other than a direct cable from the FM system to TV or using RTC as an accommodation?

Although this technique is often used with success, it is true that there is some degradation of sound when the microphone is placed in front of the television speaker. The microphone will pick up extraneous room noise, and if the speaker is low quality, the sound transmitted will be low quality. The headphone jack on the TV cannot be used because it will cut off sound to all the other students. If the TV/VCR has an auxiliary out option, the transmitter can be plugged into this jack via a patch cord for the best sound transmission. Remember, though, that students often use ALD amplification to assist them in speechreading, and because videos often have an off-screen speaker narrating on-screen activities, the hard of hearing or deaf student will still be at a disadvantage because he or she will not be able to speechread. Depending on the student's preferences, realtime captioning, C-Print, or oral or sign

interpreters could also be used (although the student will be less able to attend to on-screen demonstrations). Captioned videos should be used whenever possible.

What if the student complains of getting interference? How do you evaluate it if you do not wear hearing aids?

In general, plug the headset into the receiver and see if you can hear any problems. You should be able to tell if there are any problems. If not, it may be the student's hearing aid. (In fact, some automatic room controls, such as those for heating and lighting, can cause hearing aids to hum and deplete the batteries. See Cederbaum [1996] for more information.)

If the student is using telecoils and a neckloop instead of headphones, or if the room is looped, what do you do? Induction receivers, which look similar to FM receivers, should be kept on hand for persons needing access who do not wear hearing aids, or who do not have telecoils on the hearing aids. Service providers can use these for troubleshooting as well. Plug headphones into the induction receiver, and have someone speak into the microphone of the system. You should be able to hear what the student would be hearing coming across the loop system. You might try this in rooms even if they are not looped. You can turn on the receiver and walk around and pick up areas of static around the room. If you hear static, this may be what the student is picking up through his telecoils in using a neckloop. You may notice that some areas of

the room are static free, for example, away from the light fixtures. Let the student know where the good areas are. In some cases, you may need to change rooms, transmission systems, or coupling devices.

You can also use the induction receiver and headphones check to see if a neckloop or silhouette is working properly. Just place the receiver next to the loop while it is plugged into the system. Have someone speak into the mic. You'll pick up whatever is coming across the neckloop and be able to listen to it over the headphones.

Explain how ALDs can help a student with a learning disability or attention deficit disorder.

Sometimes students with attention deficit disorder or learning disabilities, such as a central auditory processing disorder, become easily distracted or have difficulty focus ing, especially in the presence of other noise or conversa tions. The headphones help block out some of this noise, but the major advantage is being able to turn up the vol ume on the targeted speech you are trying to focus in on. Using the system helps to overcome poor room acoustics as well. People without hearing loss or other disabilities comment on how tiring it is to attend in a setting with poor acoustics. For those with even a mild hearing loss or with a learning disability or ADD, difficulty hearing, hear ing over competing noise, or poor room acoustics can be the straw that breaks the camel's back.

C-Print Technology

How does C-Print differ from Real-time captioning?

While both are a type of speech-to-text system, there are differences that are important to be aware of. C-Print™ is not considered a verbatim system while real time captioning generally attempts to capture every word. When the rate of speech is too fast, a C-Print™ captionist will use condensing strategies to get as much information as possible. C-Print captionists will eliminate redundancies, false starts, etc. Their overall goal is to provide a meaning-for-meaning translation.

The C-Print system uses a computer (most often a laptop) and specialized software. A captionist will type on the standard keyboard using abbreviations that are expanded (in real time) by the specialized software. Real time captioners key the information into a stenography machine, which is fed into a laptop computer and converted from the stenographic language to English by specialized software.

Both systems are able to provide notes after class, but the real time notes will be a verbatim transcript and the C-Print notes will be more like a condensed transcript (e.g., 20 pages for real time notes vs. 6 pages for C-Print notes).

Some other differences include the level of training involved and the cost of the service. A real time captioner

will have two or more years of court reporting school. In most cases a C-Print captionist receives 5-6 weeks of training. The C-Print captionist is not proficient at the end of the 6th week but has the tools for building skills. Classroom experience is critical to a captionist in order to build captioning skills.

The costs for real time captioning and C-Print vary across the country, but generally C-Print captioning is less expensive.

Due to the nature of the equipment used, C-Print captionists are able to work less time without taking a break than real time captioners – for example, for a three hour class a team of C-Print captionists might work 1.5 hours each, but a real time captioner could work the full 3 hours.

How much training does a student require to use C-Print? Does a student need to understand the phonetic principles?

A student user can benefit from an initial meeting to be introduced to C-Print, however, students do not require formal training. The abbreviations expand immediately, thus the student does not need to understand phonetic principles.

How do C-Print captionists handle technical/scientific vocabulary and mathematical formulas when providing the service? How much preparation is needed for such classes?

Preparation is very helpful with classes that involve technical/scientific vocabulary or mathematical formulas (as in other service provision situations such as real time captioning or interpreting). The amount of time spent for preparation largely depends on the class content, the amount of information available prior to class from the instructor and reading materials, and the time allowed to the captionist.

How long can a C-Print captionist work at a stretch?

Due to the nature of the equipment, and cognitive and physical demand of C-Print captioning, it is recommended that a captionist break after 1- 1.5 hours.

How much does the C-Print software and hardware cost?

Most computers available for purchase have the necessary hardware specifications required to use the C-Print software. The computer vendor determines the cost of hardware. At this time the C-Print version of the abbreviation expansion software costs $150. It is recommended that in addition to the expansion software, word processing software be used. If a second laptop computer is being used for real time display purposes, the laptops will need some kind of communications software. There are many options available and the costs range from $0-$200.

Where can the hardware and software be purchased?

Hardware can be purchased from any computer vendor. There are only recommended hardware specifications (e.g., 32MBRAM, active matrix display, etc.), not required manufacturers or models. Inquiries for C-Print software should be directed to:
Pam Francis, C-Print Training Coordinator
Rochester Institute of Technology
National TechnicalInstitute for the Deaf
52 Lomb Memorial Drive
Rochester, NY 14623-5604
(716) 475-6019 (V/TTY)

What is the pay range for C-Print captionists?

Pay ranges that have been reported nationally are between $12/hour - $35/hour.

Can C-Print be applied with voice activated or speech recognition software?

At this time the technology is not available that provides voice activated speech recognition C-Print software.

Describe the training requirements (length, cost, type, where, etc.) needed to become a C-Print captionist.

Currently the most common training model used is 4-6 weeks of independent study (Phase I) with a one-week workshop (Phase II) at the completion of the independent

study. This model has made it possible to train a larger number of captionists around the country. There are other approaches being investigated; for example, certificate programs and credit courses at community and junior colleges.

Please describe the qualifications of the ideal candidate to become a C-Print captionist.

The ideal candidate to become a C-Print captionist must be a proficient typist (60+wpm) as typing speed and keyboard comfort are important and lack thereof hinders learning and skill development in other areas. The candidate must have excellent English skills, which are used in real time when a captionist is condensing and summarizing and also during editing; and excellent listening skills, which are again used during condensing and summarizing in real time and are beneficial in developing processing skills. It's also important that a captionist have aptitude with phonetics because the C-Print abbreviation system is largely based on phonetics. In addition to the aforementioned skills, it is recommended that a candidate feel confident working in high-pressure situations and in educational settings. Studies have shown that there is a high physical and cognitive demand on a C-Print captionist during real time.

Are there certification requirements for C-Print cap tioners?

Certification requirements and testing are currently being

developed at the National Technical Institute for the Deaf, a college of the Rochester Institute of Technology.

What is the most common/efficient way to display the text in the classroom? Which is most effective for an interactive classroom environment such as a science lab or a training course for computer software?

The most common type of text display is a second laptop computer. Two laptops are connected using a cable (parallel or serial) or through a wireless local area network card. In addition to the hardware for the connection, software is necessary to enable communication between the laptops. Text could also be displayed on an external computer monitor or a television monitor. If using a television monitor, a computer with a S-video jack or a converter box will be needed. The most effective way to display text, whether it is an interactive classroom or a lecture, depends on the space available, the student needs, and resources available. Here are a few examples: a) A student may have a visual impairment and need to have a second laptop with an enlarged font. b) A science lab table may not have adequate space for a laptop or it may be a hazard to have a laptop around the materials being used, so the student may choose to have an external monitor or perhaps no display at all. c) In a computer software training course it might be possible to network the captionist laptop and the lab computer in order for the student to have the training software plus the text display available on a split screen.

What is the time delay of C-Print? Can deaf students read fast enough to answer questions and follow the flow of the classroom as hearing students do?

The lag time largely depends on the proficiency level of the captionist. An estimate would be 1-5 seconds. It is recommended that student users have a 4th grade reading level or above to be able to follow the flow of the text display.

Describe how C-Print condenses text. Provide an example of how a lecture may be edited while using C-Print.

C-Print captionists use condensing and summarizing strategies to reduce the number of words typed, while preserving meaning and keeping the text displayed as near to the original message as possible (meaning-for-meaning translation). For example:

Original lecture: *We are talking about those personal factors. We are talking about my perception of roles in the family, and family roles were discussed in chapter 5.*

C-Print text: *We are talking about those personal factprs such as my perception of roles in the family discussed in chapter 5.*

I've used CART in the classroom many times and during class discussion can follow word for word. Will using C-Print give the same benefit?

A C-Print captionist follows class discussion by identifying different speakers (e.g., Professor, Male Student, Female Student, etc.) As with other support services used during discussions, it is helpful if the participants speak one at a time. Remember, there may be some condensing done, but the captionist's goal is to display the text as near to the original message as possible.

Real-Time Captioning

What accuracy percentage do you recommend your RTC's to achieve?

The normal accuracy rate should be between 80 to 100%. Anything lower may indicate the captioner is in a class that is too difficult for the experience level of that captioner.

How is real-time captioning used in group learning environments?

In a group learning environment, the captioner is in the group with the student. The Captioner should be able to identify when a student is speaking with an identifier as follows:

STUDENT:
MALE STUDENT:
FEMALE STUDENT:

The group will have to gather around the captioner and the student using the equipment.

What is being done to increase the number of RTC captioners in order to keep up with the increasing demand for captioning services? What does one do in a geographic area with few real-time captioners available?

More training needs to be provided for captioning in court reporting schools. At this time the schools mainly focus on court reporting. This seems to be a problem nationwide. If there is someone in your area that may already have captioning experience they may be able to provide captioning training to local court reporting schools.

Offering staff positions with full benefits at universities and colleges may be a way to entice court reporters to make the switch to captioning.

If Real-Time Captioning services are requested for a conference with highly specific or technical jargon, what type of preparation is involved for the captioner?

The captioner should be given as much information as possible about the event that is taking place. Technical terms should be given in advance for difficult meetings. This helps the captioner and consumers have a more accurate and readable screen.

Some captioners may charge a prep-time fee, which should not exceed more than $50 dollars. Those working in educational settings should have access to terms and class syllabi. Advance preparation before classes begin, as

well as daily prep time is needed.

Do RTC's follow a code of ethics?

Yes. Captioners should follow the same code of ethics that the interpreters follow.

Would real-time captioning work in a class like computer programming or microcomputers?

These are subject areas that depend on the student's preference. Some students prefer to have captioning in these types of classes, and others find it too confusing. Providing the captioning services to these types of classes can be done.

What are the certification requirements for real-time captioners? Do requirements differ from state to state?

In California there are no mandatory captioning certifications in place. There is a Certified Real-time Reporters test that is a court reporting-based test. As of now, most states may require an Registered Professional Reporter or Certified Realtime Reporter, which again, does not reflect the quality of captioning and the abilities of individual captioners. These tests are geared more for court reporting than captioning. Experience seems to be the best indication of a captioner's skills.

What can one expect to pay for a qualified real-time captioner?

Pay ranges may differ from state to state. Averages for captioners hired for educational captioning in California range from $17-50 in some areas. University of California, Davis pays in the $17-28 per hour range. Pay ranges for other captioning activities, State jobs, meetings, conferences, are typically $40-150 per hour in California depending on equipment used. Large group meetings may cost more per hour.

Are there remote captioning services available?

There are remote captioning services available. Check with area court reporting or captioning services for start up costs. Not all captioners may have the equipment necessary to set up this service. There are a couple of colleges in California that are using remote captioning and companies that specialize in remote captioning services.

What options are available for students to communicate with an instructor in a remote real-time situation?

In remote real-time situations, unless the student has a laptop in front of them or someone voicing if that is needed, there is no way for communication.

How do visually impaired students benefit from real-time captioning?

All captioning software should have a font enlarger, which will provide access for students with visual impairments.

Can you comment on how remote RTC competes with RTC?

There may not necessarily be any competition with either. It depends on what is
available in certain areas. If there are shortages of captioners then remote RTC
might be an option. Both services are equally as good. They are both performed by a captioner.

What are the ideal work standards for real-time captioners regarding number of hours worked, preparation time, etc?

Number of hours worked may vary with experience. More experienced captioners may want to have more hours. Less experienced captioners may need fewer hours. Captioners should not work more than 3-4 hours without breaks. Most captioners can work full days as long as breaks are incorporated into the schedule. For example, work 3 hours with an hour break, work another 3-4 hours.

Preparation time is included in the hours worked. Captioners need to have daily prep time. UC Davis has a handbook on policies and procedures which is available upon request. It addresses all issues on this subject.

What are effective options for providing RTC services for lab sessions, campus tours and educational activities that may move from room to room?

At UC Davis the disability specialist will usually check with the student and professor to see if the accommodation will be needed for the entire lab session. When the lab session is 3 hours long, if the first hour will be lecture and the other two hours the student will be working on projects, the captioners do not stay the entire time.

Classes that move from room to room are a little more difficult for captioners. They have to break down equipment, move and reboot which can be problematic, especially if the class is only an hour long. If the move is prearranged and captioners know ahead of time it usually is not a problem.

As far as campus tours this could be more difficult unless there is a specific room designated for captioners. They will not be able to follow the students on a walking-type tour.

How can RTC or C-Print be used when students do not voice for themselves?

Most captioning software has a feature which allows consumers to type on the laptop computer that the captioner is using. The consumer can type a question or answer and the captioner can voice.

How different is the content of a RTC script compared to a C-Print script of the same lecture?

RTC is a near verbatim translation, so transcripts can vary in length. Usually RTC produces around 8-12 pages per hour depending on the speed of the speaker. C-Print provides a more summarized version; it is not a verbatim translation so there are fewer pages per hour. This may work for students who do not need a verbatim transcript.

How effective is speech recognition software in providing captioning services in the classroom?

As of this time there are no universities using speech recognition in place of captioning in California. The software is improving every year, but it is not perfected yet. The Internet may provide access to more information on speech recognition software.

Is group voice recognition viable for conference real-time speech to print?

As of this time, voice recognition is not viable for group conferences.

List some of the manufacturers of the various technologies.

Some manufacturers of various captioning software are:

Cheetah, Rapidtex, Eclipse, Premier Power, StenoCat, Rapidwrite, Openwrite, Turbo-CAT, Stenotech.

POLICY QUESTIONS:

Do you require captioners to pass CSR certification?

Captioners who work for UC Davis and other colleges in the Sacramento, CA area are not required to be CSR certified. CSR and RPR are court reporting tests and do not ensure that persons with these certifications can caption. Consumer feedback and evaluation of captioners is the criteria most often used when hiring.

Are copies of the C-Print or CART notes available to faculty and other students?

Normally notes should not be given to students not receiving services unless prior arrangements have been made. For example, if a student with a learning disability is in the same class with the student using the accommodation, notes may be given to that student only if approved by student support services staff. Faculty members often request copies of lectures they have given and these are always provided.

How do you determine who gets RT when the demand is greater than the number of services providers?

This is always difficult to solve. You must make every effort to find RTC or C-Print. Make sure to document everything. Call local court reporting agencies, Court

reporting schools, and agencies which provide services to deaf and hard of hearing individuals. Creating staff positions at universities and colleges that include benefits may help in locating service providers.

What is being done to meet the increased need for real-time captioners?

The training of real-time captioners needs to start in court reporting schools and unfortunately, not many schools provide training. Contacting court reporting schools in local areas and telling them of the need for captioners may help to start training programs. Court reporters who are looking for a change may be interested in captioning. Offering staff positions at universities and colleges may help to entice court reporters to make the switch.

If a student doesn't show up for class, does the captioner go ahead and caption, giving the notes to the student later, or just leave?

UC Davis has a policy that states if a student is not present in class, or gets up and leaves during the class, captioners are to stop captioning. If a student is not present in class, the captioner does not stay and take notes. If there is some special circumstance and it has been pre-approved the captioner may stay; otherwise it is considered an unfair advantage to the deaf student in the class.

Can RT, C-Print services be discontinued if the student isn't utilizing the service?

Services should be discontinued if the student is not utilizing the services, especially if there are not enough providers and other students can benefit from the services. UC Davis has a policy that all services will be discontinued if students miss more than three classes with unexcused absences.

What do institutions do when a captioner is absent, both short and long-term?

If a captioner is absent short-term, try to have other captioners cover those classes, if possible. If that is not possible, taping the lecture and providing a copy of the transcript is another option. If the student is familiar with sign language, providing interpreters for the classes is another option.

If a fluent signer requests real-time services and your institution has limited resources for RTC and plenty of qualified interpreters, can you require the student to use an interpreter?

The institution should give priority on providing effective and appropriate accommodations and should give "primary consideration" to the communication preferences of the individual with a disability. This does not necessarily mean that the student controls the selection of services; that remains within the purview of the college. On the other hand the college needs to demonstrate that its choice of accommodation is effective. Making a determination as to what is an effective and appropriate accommodation for

a particular student must be decided on a case-by-case basis.[1]

What criteria would differentiate the occasions where CART vs. C-Print can or should be used? Where does the preference of the student play a role in selecting between the two?

Students should have a choice, if both services are available, and when a student chooses one or the other, those services should be provided. C-Print may not work for students who prefer a full set of notes from classes. An example would be difficult science courses or classes with dense difficult terminology and fast-paced speakers. Degree of hearing loss of the students and availability of CART or C-Print may be factors in determining who gets what services.

ADA requires that you look at each individual case separately to make a determination about appropriate accommodations. Notetaking is almost always appropriate, because a student cannot take their own notes and read lips or watch an interpreter without missing something. Notetaking alone, though, usually will not be enough for communication access. Notes do not provide the information needed to be able to join in the discussion or to ask questions for clarification.

How does a service provider determine which accommodation, or if a requested accommodation, is appropriate?

You cannot judge by severity of hearing loss, since speech reading skill will also be a factor. You cannot judge by how clearly a person speaks. It is not necessarily true that students with less of a hearing loss will have better speech (or vice versa). So, what should you be looking at? Is the course in a large room with many students? The student may not be able to sit close enough to speech read. Does the instructor have an accent or facial hair? These both make it difficult to speech read. Likewise, does the class require that the instructor is providing demonstrations and looking down, or is the instructor's speaking style such that she does not face the class much of the time? Does the instructor speak rapidly? Is the class heavy in vocabulary, such as biology? Unfamiliar vocabulary is difficult to speech read. Is there a lot of interaction or class discussion? Students in the class are typically not speaking into a microphone, so ALD's may fail in this situation. The student cannot use sound to locate the speaker, and therefore will not be able to follow the discussion with speechreading alone. In any of these cases, it would be entirely appropriate to provide C-Print or Realtime support in addition to ALD's.

How do you provide access for deaf students who take high-level foreign language classes?

There are a number of ways to improve access for deaf students taking foreign language courses, depending on the student's communication preferences and whether or not the student's goal is to speak and speechread the language in addition to being able to read and write the foreign language. Real time captioning can sometimes be provided, but it requires a specially developed dictionary in the foreign language. The same problem applies to C-Print, since it is based on phonetics. Automatic speech recognition programs may work in some limited applications, assuming the output can be viewed and corrected as mistakes are made.

If pronunciation is important to the student, cued speech is one possibility, but if the student does not already know cued speech, it may be too much to learn cued speech at the same time the student is learning the foreign language.

The answer to this question depends upon the needs of the individual student. These tips and many others for students, instructors, interpreters, and service providers can be found in the training module developed by the Northwest Outreach Center entitled 'Foreign Language Instruction: Tips for Accommodating Deaf and Hard-of-Hearing Individuals'. It is available at no cost through the PEPNet Resource Center or on the NWOC website at http://www.wou.edu/nwoc.forlang.htm.

Do you see C-Print and RTC eventually taking the place of interpreters and notetakers?

RTC and C-Print should not be used as replacement services for students whose choice of accommodation is sign language. This will only cause frustration for the students and the captioners.

How long after the class does it take before the student receives hard copies of notes for both RTC and C-Print?

Turnaround time for transcripts should be no later than the next class meeting. If there is an exam, an unedited disk can be given to students immediately after class, and an edited version should be given later. If it is possible to get transcripts out that day or the next, that is preferred. E-mailing transcripts to students helps to speed up the delivery process.

References

[1]Kincaid, J.,Esq, and Rawlinson, S., M.S.W., "Americans with Disabilities Act: Responsibilities for Postsecondary Institutions Serving Deaf and Hard of Hearing Students" March 1999

Midwest Center for Postsecondary Outreach
235 Marshall Avenue
St. Paul, MN 55102

Non-Profit Org.
U.S. Postage
PAID
Permit No. 4044
St. Paul, MN

39